

**BEFORE THE
NATURAL RESOURCES COMMISSION
OF THE
STATE OF INDIANA**

IN THE MATTER OF:

AMENDS 312 IAC 12-2-4 AND 312 IAC 13-8-1,)	Administrative Cause
GOVERNING SMALL CAPACITY WELLS AND)	Number: 14-081W
USE OF GEOTHERMAL GROUT, RESPECTIVELY)	LSA Document #14-204(F)

**REPORT ON RULE PROCESSING, PUBLIC HEARING, AND HEARING OFFICER
ANALYSES WITH RECOMMENDATIONS REGARDING FINAL ADOPTION**

1. RULE PROCESSING

For consideration as to final action, are the proposed amendments to 312 IAC 12-2-4 to specify minimum pump setting depths for small capacity water wells that must be met to qualify for protection under IC 14-25-4 (emergency regulation of ground water rights). Also, proposed are amendments to 312 IAC 13-8-1 to allow for the use of industry standard grout materials for geothermal wells and to allow the Department of Natural Resources (the “DNR”) Division of Water to approve other grout additives.

The Natural Resources Commission (the “Commission”) gave preliminary adoption to the proposed amendments on March 18, 2014 in two separate agenda items. The two rule amendment proposals were subsequently joined under one rule package for efficiency. As reported in the pertinent portions of the March 18 minutes:

Consideration of request for preliminary adoption of amendments to 312 IAC 12-2 that provides standards for water well drillers and water well pump installers; Administrative Cause No. 13-080W

Monique Riggs, Environmental Specialist with the Division of Water, presented this item. She said the proposed amendments would provide standards for water well drillers and pump installers. The amendments would specify minimum pump setting depths for small capacity water wells that are required to qualify for protection under Indiana Code 14-25-4. The amendments are in response to 2010 amendments to IC 25-39 and 312 IAC 13. The statute and rule provide well construction standards, licensing for water well drillers and water well pump installers, and mandatory available drawdown

requirements for water well pumping equipment. The proposed rules would reduce regulatory burden on water well drillers and pump installers to inform homeowners of the provisions of IC 25-39. The amendments would help owners of small capacity domestic wells to meet the requirements for protections provided under the law if the domestic wells are impacted by local high-capacity pumping. Riggs said the Division of Water recommended the preliminary adoption of the rule amendments.

Thomas Easterly asked if the DNR considered a rule to inform any future buyers of a property.

Riggs responded, "It's not currently a provision in our rules, but something we may want to consider. I believe that water wells are subject to being disclosed at the time of a real estate transaction. Any issues with a water well would have to be disclosed at that time, but that would be outside our regulatory authority."

Riggs continued, "In a nut shell the standards would prevent there being a choice in play." She said prior to the requirements, the well drillers or pump installers would propose, to be decided by the homeowner, the pump setting depth subject to whether the well would meet the requirements of Indiana's Water Rights Law and be protected under that law. "This takes the choice out of it and puts the emphasis on the well driller to install a pump in a way that meets a certain minimum standard that would guarantee protection under those provisions. There can be a variance issue in the case that the minimum pump setting depths cannot be met. The bedrock conditions or the wells being installed, they can still get a variance from the Division by calling in and explaining a particular situation. We just have to determine whether or not to issue a variance for that particular situation."

The Chair asked, "What was the genesis of this?"

Riggs said the rule amendments were initiated due to amendments to IC 25-39, and the associated rules 312 IAC 13, which establish minimum pump setting standards. The standards require 20 feet of available drawdown in an unconsolidated water well finished in sand and gravel, or 50 feet of available drawdown in a well finished in consolidated or bedrock materials. "This is sort of a 'sister rule' to the Indiana Water Rights Law, so it needed to be updated to match the well construction standards in 312 IAC 13."

Doug Grant moved to give preliminary adoption to the amendments to 312 IAC 12-2 that provides standards for water well drillers and water well pump installers. Jane Ann Stautz seconded the motion. Upon a voice vote, the motion carried.

Consideration of request for preliminary adoption of proposed amendments to 312 IAC 13 to allow for the use of industry standard grout materials, and provide for Division of Water approval of grout additives, for vertical closed loop geothermal wells; Administrative Cause Number 14-022W

Monique Riggs also presented this item. The proposed amendments relate to the well construction standards set forth in 312 IAC 13 and would assist with the implementation of IC 25-39. In particular, the amendments respond to the developing use of high solids bentonite grout containing graphite, or other neat cement based geothermal grouts, for vertical closed loop geothermal systems. These additives enhance the thermal conductivity and pump ability of the group material. A temporary rule, LSA Document #13-499(E), is currently in place to authorize the use of graphite in geothermal grout material.

Riggs reported the use of graphite to thermally enhance geothermal grout material has proven effective and environmentally safe and has been approved by several Midwestern States, including Michigan, Kansas and Wisconsin. High solids geothermal grout enhanced with graphite has also been specified for use in Ball State University's current \$33.1 million geothermal well installation project. Other neat cement based geothermal grouts have also been found to be effective and environmentally safe and have been approved for use in ten States. 312 IAC 13-8-1 currently allows only the addition of sand to enhance the thermal conductivity and pump-ability of geothermal grout. The proposed amendments would authorize: (1) the addition of graphite to high solids bentonite grout; (2) the use of neat cement based grouts; and, (3) the ability of the Division of Water to approve the use of other geothermal grout additives.

Riggs said that the Division of Water recommends the Commission give preliminary adoption to amendments to 312 IAC 13, as provided in “Exhibit A”.

Thomas Easterly moved to approve for preliminary adoption the proposed amendments to 312 IAC 13 to allow for the use of industry standard grout materials, and to authorize Division of Water approval of other grout additives for vertical closed loop geothermal wells. R. T. Green seconded the motion. Upon a voice vote, the motion carried.

Executive Order 13-03 required agencies to “suspend rulemaking action on any proposed rules for which a notice of intent to adopt a rule...was not submitted to the office of the Indiana *Register* on or before January 14, 2013.” Additional compliance provisions were included in Financial Management Circular 2013-01. Cameron Clark, Director of the Indiana Department of Natural Resources (“DNR”) submitted to the Office of Management and Budget (“OMB”) requests for “exemption to the suspension of rulemaking action under the provisions of Executive Order 13-03” under separate cover letters for the proposed amendments at 312 IAC 12-2-4 and 312 IAC 13-8-1. In letters dated February 5, 2014, Christopher D. Atkins, Director, Office of Management and Budget, wrote that DNR’s “request qualifies for an exception under Section 6(b) of Executive Order 13-03. Therefore, DNR may proceed”.

The “Notice of Intent” to adopt the rule amendments was published in the Indiana *Register* at 20140611-IR-312140204NIA on June 11, 2014. The notice identified Mark Basch, with the Division of Water, as the “small business regulatory coordinator” for purposes of IC 4-22-2-28.1.

The Commission caused the information required by IC 4-22-2-22.5 to be included in the rulemaking docket maintained on its website at <http://www.in.gov/nrc/2377.htm>. The rulemaking docket was also updated periodically as the rule adoption progressed.

As specified by the Executive Order that then applied, proposed fiscal analyses of the rule proposal, and the rule standards analysis under IC 4-22-2-19.5 were submitted, along with a copy of the proposed rule language and a copy of the posted Notice of Intent, to OMB and the Legislative Council on July 11, 2014. In a letter dated August 27, 2014, Brian E. Bailey, Director of the State Budget Agency, stated, in part, “After reviewing the proposed rule, the recommendation of the State Budget Agency is that the rule changes be approved.”

On September 4, 2014, the Division of Hearings submitted the rule proposal to the Legislative Services Agency (“LSA”), along with the “Statement Concerning Rules Affecting Small Business” (also known as the “Economic Impact Statement”). The Notice of Public Hearing and the Justification Statement (IC 4-22-2-24(d)(3)) were submitted to LSA on September 8, 2014. On September 17, 2014, the following were posted to the *Indiana Register*: the text of the proposed rule (20140917-IR-312140204PRA); the notice of public hearing (20140917-IR-312140204PHA); and the Economic Impact Statement (20140917-IR-312140204EIA). Following receipt from LSA of an “Authorization to Proceed”, the Division of Hearings caused Notice of Public Hearing to be published on September 24, 2014 in the *Indianapolis Daily Star*, a newspaper of general circulation in Marion County, Indiana.

The Statement Concerning Rules Affecting Small Businesses (the “EIS”), as required under IC 4-22-2.1-5, and submitted by the Small Business Regulatory Coordinator, indicates:

Economic Impact Statement
LSA Document #14-204

IC 4-22-2.1-5 Statement Concerning Rules Affecting Small Businesses

Estimated Number of Small Businesses Subject to this Rule:

Approximately 450 water well drilling companies, which includes 985 licensed water well drillers and water well pump installers, are believed to be subject to the provisions of this rule.

Estimated Average Annual Reporting, Record Keeping, and Other Administrative Costs Small Businesses Will Incur for Compliance:

No annual reporting, record keeping or other administrative costs are expected to be incurred by small business for compliance with this rule.

Estimated Total Annual Economic Impact on Small Businesses to Comply:

No annual economic impact is expected to be incurred by small business for compliance with this rule.

Justification Statement of Requirement or Cost:

No cost is expected to be incurred by small business for compliance with this rule.

Regulatory Flexibility Analysis of Alternative Methods:

No regulatory flexibility analysis of alternative methods was conducted by the DNR.

2. PUBLIC HEARING

The October 27, 2014, public hearing was convened as published. The public comment period closed at the end of October 27, 2014. The close of the public comment period was also posted

on the Commission's online rule docket at <http://www.in.gov/nrc/2377.htm>. Monique Riggs and Mark Basch from the DNR, Division of Water attended the public hearing. No other member of the public was in attendance.

3. PUBLIC COMMENT

The rule proposal was posted on the Commission's online rule docket. No comments were received through the online form or through regular mail regarding the proposed rule amendments.

4. HEARING OFFICERS ANALYSES WITH RECOMMENDATION REGARDING FINAL ADOPTION

IC 14-25-4 provides protection for the owner of a small capacity well against the impacts of a significant ground water withdrawal facility (greater than 100,000 gallons per day capacity) if the facility substantially lowers ground water levels resulting in the failure of the small capacity well. 312 IAC 12 establishes minimum construction standards for small capacity water wells in order to be protected under IC 14-25-4. Construction standards in 312 IAC 12 are not mandatory; however, a water well driller or water or plumbing contractor must advise the person for whom a water well is drilled or equipped of the provisions in IC 14-25-4 and 312 IAC 12.

IC 25-39 and 312 IAC 13 provide well construction standards and licensing for water well drillers. In 2010, the statute and rule were amended to also require licensing of water well pump installers and mandatory "available drawdown"¹ requirements for water well pumping equipment. The proposed amendments to 312 IAC 12-2-4 would provide consistency with the pump installer licensing and mandatory minimum construction standards in IC 25-39 and 312 IAC 13. Currently, a water well driller or plumbing contractor must advise the person for whom a water well is drilled or equipped of the statutory and rule provisions before a small capacity well can be drilled or equipped. With the proposed amendments, the water well driller or water well pump installer must also obtain approval from the Division of Water for the installation of a

¹ "Available drawdown" is defined at 312 IAC 13-1-3.2 and means "the distance between the static water level and the pump setting".

small capacity well that does not comply with IC 14-25-4 or 312 IAC 12. 312 IAC 12-2-4(a)(2) allows the Division of Water to consider approval for a small capacity water well that cannot be constructed according to the requirements in statute and rule, such as in cases where the minimum pump setting depths cannot be met due to limiting conditions at the location of the proposed well. The proposed amendments would help owners of small capacity domestic wells to meet the requirements for protections provided under the law if the domestic wells are impacted by local high-capacity pumping.

The proposed amendments to 312 IAC 13-8-1 is in response to the current use of high solids bentonite grout containing graphite, and other neat cement based geothermal grouts, for vertical closed loop geothermal systems. The use of graphite to thermally enhance geothermal grout material has proven to be effective and environmentally safe, and has been approved for use in other states. Various other neat cement based geothermal grouts have also been found to be effective and environmentally safe, and have also been approved for use in other states.

Currently, the permanent rule allows only for the addition of sand to enhance the thermal conductivity and pumpability of geothermal grout. The proposed amendments would allow for the addition of graphite to high solids bentonite grout and the use of neat cement based grouts. The addition of 312 IAC 13-8-1(c)(3), allowing the use of “another material approved by the division” provides the Division of Water regulatory flexibility to approve new additives that become available and have been found to be effective and environmentally safe.

The DNR Director adopted an emergency rule, LSA Document #13-499(E), which became effective November 1, 2013 (20131106-IR-312130499ERA), authorized additionally the use of graphite, or other materials approved by the Division of Water to enhance thermal conductivity. The proposed amendments to 312 IAC 13-8-1 would make those authorizations permanent. As of the date of this report, the Division of Water is processing a renewal of the temporary rule, which will be effective until the permanent rule is in place.

The proposed amendments to 312 IAC 12-2-4 and 312 IAC 13-8-1, as contained in “Exhibit A,” are appropriate and presented for consideration as to final adoption.

Dated: October 30, 2014

Jennifer M. Kane
Hearing Officer

EXHIBIT A

TITLE 312 NATURAL RESOURCES COMMISSION

Final Rule

LSA Document #14-204(F)

DIGEST

Amends 312 IAC 12-2-4 to specify minimum pump setting depths for small capacity water wells that must be met to qualify for protection under IC 14-25-4. Amends 312 IAC 13-8-1 to help implement IC 25-39 for the use of high solids bentonite grout containing graphite, and other neat cement based geothermal grouts, for vertical closed loop geothermal systems to enhance thermal conductivity and pumpability of the grout material. Effective 30 days after filing with the Publisher.

312 IAC 12-2-4; 312 IAC 13-8-1

SECTION 1. 312 IAC 12-2-4 IS AMENDED TO READ AS FOLLOWS:

312 IAC 12-2-4 Duty of water well drillers and water well pump installers to notify; water wells not conforming to this article

Authority: IC 14-10-2-4; IC 14-25-4-13; IC 14-25-4-17

Affected: IC 14-25-4; IC 25-39

Sec. 4. (a) **Before a ground water withdrawal facility that would not comply with IC 14-25-4 and this article is drilled or equipped**, a water well driller or a ~~plumbing contractor~~ **water well pump installer** must:

- (1) advise a person, for whom a ground water withdrawal facility is drilled or equipped, of the provisions of IC 14-25-4 and this article; ~~before the ground water withdrawal facility is drilled or equipped; and~~
- (2) **obtain approval from the division for the installation of a water well or pumping equipment that does not comply with IC 14-25-4 and this article.**

(b) A person may authorize a water well driller or a ~~plumbing contractor~~ **water well pump installer** to drill or equip a water well ~~in a manner that does not conform to this article if the water well is drilled or equipped in a manner which otherwise conforms to~~ **otherwise conform** to IC 25-39 and 312 IAC 13. A water well authorized under this ~~subsection~~ **section** is not unlawful, but the relief provided by IC 14-25-4 is unavailable to the owner of the well. (*Natural Resources Commission; 312 IAC 12-2-4; filed Feb 9, 1999, 5:08 p.m.: 22 IR 1952; filed Feb 7, 2000, 3:31 p.m.: 23 IR 1367; readopted filed Aug 4, 2005, 6:00 p.m.: 28 IR 3661; readopted filed Jul 28, 2011, 10:29 a.m.: 20110824-IR-312110177RFA*)

SECTION 2. 312 IAC 13-8-1 IS AMENDED TO READ AS FOLLOWS:

312 IAC 13-8-1 Geothermal heat pump wells

Authority: IC 14-10-2-4; IC 25-39-4-2; IC 25-39-4-9

Affected: IC 25-39

Sec. 1. (a) This section establishes standards for drilling ground water heat pump systems that are in addition to the general requirements for drilling a well under 312 IAC 12.

(b) If a return well is used with an open loop system, its design ~~shall~~ **must** provide a water transmitting capacity that is at least one and one-half (1 1/2) times the required water supply of the heat pump unit.

(c) With respect to a vertical closed loop system, boreholes ~~shall~~ **must** be pressure grouted from the bottom of the borehole to the ground surface with a **neat cement or** high solids bentonite grout that, ~~may contain sand~~ to enhance thermal conductivity, **may contain any of the following:**

(1) Sand.

(2) Graphite.

(3) Another material approved by the division.

(Natural Resources Commission; 312 IAC 13-8-1; filed Nov 22, 1999, 3:34 p.m.: 23 IR 770; readopted filed Aug 4, 2005, 6:00 p.m.: 28 IR 3661; filed Jul 14, 2006, 1:23 p.m.: 20060809-IR-312050341FRA; readopted filed May 20, 2011, 3:28 p.m.: 20110615-IR-312110002RFA)